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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/065,215	09/26/2002	Anthony Gerald King	201-1280 FAM	8181

28549   7590   09/22/2004

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NGUYEN, HUNG T

ART UNIT	PAPER NUMBER
2636	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 August 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12 and 14-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12 and 14-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1-3, 5-7 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kopischke (U.S. 6,359,553) in view of Bates et al. (U.S. 6,337,638) further in view of Brambilla

et al. (U.S. 6,199,903) and further in view of Samukawa et al. (U.S. 6,593,873).

Regarding claim 1, Kopischke discloses a collision system for an automobile [fig.1,col.2, lines

20-28 and col.3, line 63 to col.4, line 23] comprising:

- object sensor (2) for detecting an object / obstacle (8) [fig.1, col.2, lines 41-48 and col.3, line

63 to col.4, line 23];

- a controller (5) is connected to the object sensor (2) [fig.1, col.2, lines 36-53 and col.4, lines 7-

23];

- the controller (5) generating a collision signal indicative of a potential collision as the distance

are determined between the vehicle & the object (8) [fig.1, col.2, lines 36-53].

    Kopischke does not specifically mention the collision system having a device for determining

motion properties of the object / obstacle.

Bates teaches a vehicle warning radar system (100) for collision includes a computer system (106) for determining / detecting (102,104) relative distances and speed of targeted vehicles (504,506) relate to a vehicle (100,502) [figs.5-7, col.2, line 63 to col.3, line 59 and col.6, line 60 to col.7, line 11].

Therefore, it would have been obvious to one having ordinary skill in the art to employ the teaching of Bates in the system of Kopischke for detecting & determining an accurate motion signal of the object to prevent a collision between vehicle and obstacles.

The combination of Kopischke & Bates is still missing a "kinetic energy".

Brambilla teaches a function of the determined accident severity includes a control unit (2) is connected to a crash parameter detection system (6) for detecting the relative speed to the collision object shortly before the crash event. Based on a measured relative speed, in cases when the vehicle's own speed, a conclusion can be drawn that a vehicle is moving. On the basis of a typical vehicle mass, the kinetic energy of the colliding vehicle can be estimated [fig.1, col.4, line 59 to col.5, line 12].

Therefore, it would have been obvious to one having ordinary skill in the art to have the teaching of Bates & Brambilla includes a kinetic energy function in the system of Kopischke which allows for determination of potential collision severity between the host vehicle and the target object more accurate and thereby further preventing injury.

The combination of Kopischke & Bates and Brambilla is still missing a new limitation as determining depth of the object as currently amended.

Samukawa teaches an obstacle recognition system for automotive vehicle in step (150) which may detect the **depth (D0), width (W0)** and speed of the object [fig.3, col.10, lines 30-39].

Therefore, it would have been obvious to one having ordinary skill in the art to have the

teaching of Bates / Brambilla & Samukawa includes the depth of the object feature in the system

of Kopischke which allows for determination of potential collision severity between the host

vehicle and the condition of target object more accurate & complete details and thereby further

preventing injury.

Regarding claim 2, Kopischke discloses the controller (5) and object sensor (2) may recognize

whether object / obstacle as a vehicle or person or animal or some other object [col.4, lines 7-23

];

- the controller (5) generating a collision signal indicative of a potential collision as the distance

are determined between the vehicle & the object (8) [fig.1, col.2, lines 36-53]; and

to prevent a collision of the vehicle with a obstacle by producing a controlled acceleration /

deceleration and the object can be seen through a CCD camera [col.1, lines 24-41].

Furthermore, Bates discloses the vehicle warning radar system (100) for collision includes a

computer system (106) for determining / detecting (102,104) relative distances and speed of

targeted vehicles (504,506) relate to a vehicle (100,502) [figs.5-7, col.2, line 63 to col.3, line 59

and col.6, line 60 to col.7, line 11].

Therefore, it would have been obvious to one having ordinary skill in the art to have the

teaching of Bates in the system of Kopischke for controlling & preventing the collision between

the obstacle and the vehicle.

Regarding claim 3, Bates discloses the vehicle warning radar system (100) for collision includes a computer system (106) for determining / detecting (102,104) relative distances and speed of targeted vehicles (504,506) relate to a vehicle (100,502) / momentum of the object [figs.5-7, col.2, line 63 to col.3, line 59 and col.6, line 60 to col.7, line 11].

Regarding claim 5, Kopischke discloses the controller (5) and object sensor (2) may recognize whether object / obstacle as a vehicle or person or animal or some other objects in or near the direction of motion of the vehicle by using a radio signal for detecting them [col.4, lines 7-23 and lines 52-61]; and

Bates discloses the vehicle warning radar system (100) for collision includes a computer system (106) for determining / detecting (102,104) relative distances and speed of targeted vehicles (504,506) relate to a vehicle (100,502) / momentum of the object [figs.5-7, col.2, line 63 to col.3, line 51 and col.6, line 60 to col.7, line 11].

Regarding claim 6, Kopischke discloses the controller (5) and object sensor (2) may recognize whether object / obstacle as a vehicle or person or animal or some other object which contains shape , volume, height , width information of the objects [col.4, lines 7-23].

Regarding claim 7, Kopischke discloses the controller (5) and object sensor (2) may recognize whether object / obstacle as a vehicle or person or animal or some other objects in or near the direction of motion of the vehicle by using a radio signal for detecting them [col.4, lines 7-23 and lines 52-61]; and

Bates discloses the vehicle warning radar system (100) for collision includes a computer

system (106) for determining / detecting (102,104) relative distances and speed of targeted

vehicles (504,506) relate to a vehicle (100,502) / momentum of the object [figs.5-7, col.3, lines

31-51].

Regarding claim 9, Kopischke discloses the collision system for an automobile [fig.1,col.2, lines

20-28 and col.3, line 63 to col.4, line 23] comprising:

- object sensor (2) for detecting an object / obstacle (8) [fig.1, col.2, lines 41-48 and col.3, line

63 to col.4, line 23];

- a controller (5) is connected to the object sensor (2) [fig.1, col.2, lines 36-53 and col.4, lines 7-

23];

- the controller (5) generating a collision signal indicative of a potential collision as the distance

are determined between the vehicle & the object (8) [fig.1, col.2, lines 36-53].

Kopischke does not specifically mention the collision system having a device for determining

motion properties of the object / obstacle.

Bates teaches a vehicle warning radar system (100) for collision includes a computer system

(106) for determining / detecting (102,104) relative distances and speed of targeted vehicles

(504,506) relate to a vehicle (100,502) [figs.5-7, col.2, line 63 to col.3, line 59 and col.6, line 60

to col.7, line 11].

Therefore, it would have been obvious to one having ordinary skill in the art to employ the

teaching of Bates in the system of Kopischke for detecting & determining an accurate motion

signal of the object to prevent a collision between vehicle and obstacles as desired.

3.   Claims 10-12 & 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Kopischke (U.S. 6,359,553) in view of Bates et al. (U.S. 6,337,638) further in view of Brambilla

et al. (U.S. 6,199,903) and further in view of Breed et al. (U.S. 6,370,475).

Regarding claim 10, Kopischke discloses a method of collision for an automobile [fig.1,col.2,

lines 20-28 and col.3, line 63 to col.4, line 23] comprising:

- object sensor (2) for detecting an object / obstacle (8) [fig.1, col.2, lines 41-48 and col.3, line

63 to col.4, line 23];

- a controller (5) is connected to the object sensor (2) [fig.1, col.2, lines 36-53 and col.4, lines 7-

23];

- the controller (5) generating a collision signal indicative of a potential collision as the distance

are determined between the vehicle & the object (8) [fig.1, col.2, lines 36-53].

Kopischke does not specifically mention the method of collision having a device for

determining motion & velocity of the object / obstacle relative to the automobile.

Bates teaches a vehicle warning radar system (100) for collision includes a computer system

(106) for determining / detecting (102,104) relative distances and speed of targeted vehicles

(504,506) relate to a vehicle (100,502) [figs.5-7, col.2, line 63 to col.3, line 59 and col.6, line 60

to col.7, line 11].

Therefore, it would have been obvious to one having ordinary skill in the art to employ the

teaching of Bates in the system of Kopischke for detecting & determining an accurate motion

signal of the object to prevent a collision between vehicle and obstacles.

The combination of Kopischke & Bates is still missing a "kinetic energy" of the object.

Brambilla teaches a function of the determined accident severity includes a control unit (2) is connected to a crash parameter detection system (6) for detecting the relative speed to the collision object shortly before the crash event. Based on a measured relative speed, in cases when the vehicle's own speed, a conclusion can be drawn that a vehicle is moving. On the basis of a typical vehicle mass, the kinetic energy of the colliding vehicle can be estimated [fig.1, col.4, line 59 to col.5, line 12].

Therefore, it would have been obvious to one having ordinary skill in the art to have the teaching of Bates & Brambilla includes a kinetic energy function in the system of Kopischke which allows for determination of potential collision severity between the host vehicle and the target object more accurate and thereby further preventing injury.

The combination of Kopischke & Bates and Brambilla are still missing a classifying object signal and estimating mass of the object.

Breed teaches an accident avoidance system having a camera system which can identify the objects whether a sign, truck, vehicle, other objects and may estimate the mass of object for preventing any potential collision [col.45, lines 54-61].

Therefore, it would have been obvious to one having ordinary skill in the art to have the teaching of Bates / Brambilla & Breed includes the identify the objects & estimate the object's mass features in the system of Kopischke which allows for determination of potential collision severity between the host vehicle and the condition of target object more accurate & complete details and thereby further preventing injury.

Regarding claims 11-12, Kopischke discloses the controller (5) and object sensor (2) may

recognize whether object / obstacle as a vehicle or person or animal or some other objects in or

near the direction of motion of the vehicle [col.4, lines 7-23 and lines 52-61]; and

to prevent a collision of the vehicle with a obstacle by producing a controlled acceleration /

deceleration and the object can be seen through a CCD camera [col.1, lines 24-41].

Bates discloses the vehicle warning radar system (100) for collision includes a computer

system (106) for determining / detecting (102,104) relative distances and speed of targeted

vehicles (504,506) relate to a vehicle (100,502) [figs.5-7, col.2, line 63 to col.3, line 51 and

col.6, line 60 to col.7, line 11].

Therefore, it would have been obvious to one having ordinary skill in the art to utilize the

teaching of Bates in the system of Kopischke for detecting & determining accurate motion signal

of the multi objects to prevent a collision between vehicle and obstacles as desired.

Regarding claim 14, Kopischke discloses the controller (5) and object sensor (2) may recognize

whether object / obstacle as a vehicle or person or animal or some other object which contains

shape, volume, height , width information of the objects [col.4, lines 7-23].

Regarding claims 15-16, Kopischke discloses a method of collision for an automobile [

fig.1,col.2, lines 20-28 and col.3, line 63 to col.4, line 23] comprising:

- object sensor (2) for detecting an object / obstacle (8) [fig.1, col.2, lines 41-48 and col.3, line

63 to col.4, line 23];

- a controller (5) is connected to the object sensor (2) [fig.1, col.2, lines 36-53 and col.4, lines 7-23];

- the controller (5) generating a collision signal indicative of a potential collision as the distance are determined between the vehicle & the object (8) [fig.1, col.2, lines 36-53];

- the controller (5) and object sensor (2) may recognize whether object / obstacle as a vehicle or person or animal or some other object which contains shape , volume, height , width information of the objects [col.4, lines 7-23].

Kopischke does not specifically mention the method of collision having a device for determining motion of the object / obstacle relative to the automobile.

Bates teaches a vehicle warning radar system (100) for collision includes a computer system (106) for determining / detecting (102,104) relative distances and speed of targeted vehicles (504,506) relate to a vehicle (100,502) [figs.5-7, col.2, line 63 to col.3, line 59 and col.6, line 60 to col.7, line 11].

Therefore, it would have been obvious to one having ordinary skill in the art to have the teaching of Bates in the system of Kopischke for detecting & determining an accurate motion signal of the object to prevent a collision between vehicle and obstacles as desired.

The combination of Kopischke & Bates and Brambilla are still missing estimating mass or volume of the object.

Breed teaches an accident avoidance system having a camera system which can identify the objects whether a sign, truck, vehicle, other objects and may estimate the mass of object for preventing any potential collision [col.45, lines 54-61].

Therefore, it would have been obvious to one having ordinary skill in the art to have the teaching of Bates / Brambilla & Breed includes the identify the objects & estimate the object's mass features in the system of Kopischke which allows for determination of potential collision severity between the host vehicle and the condition of target object more accurate & complete details and thereby further preventing injury.

4.   Claims 4, 8 & 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopischke (U.S. 6,359,553) in view of Bates et al. (U.S. 6,337,638) further in view of Brambilla et al. (U.S. 6,199,903) further in view of Samukawa et al. (U.S. 6,593,873) and further view of Miller et al. (U.S. 6,480,144).

Regarding claim 4, The combination of Kopischke, Bates, Brambilla & Samukawa is still missing the system comprises a collision countermeasure is connected to the controller in response to the collision signal.

Miller teaches a collision countermeasure system for an automobile (12) includes a countermeasure controller (16) in operative communication with various countermeasure device (17) as an object detection system (14) for detecting & determining the potential for a collision between objects within a close proximity of the vehicle [fig.1, col.3, line 24 to col. 4, line 24].

Therefore, it would have been obvious to one having ordinary skill in the art to have the teaching of Bates, Brambilla, Samukawa & Miller includes a countermeasure device in the

system of Kopischke for detecting & determining more accurate motion signal of the object to prevent a collision between vehicle and obstacles as desired.

Regarding claim 8, The combination of Kopischke, Bates, Brambilla & Samukawa is still missing the object detector is a camera.

Miller teaches a collision countermeasure system for an automobile (12) includes a object detection system (14) having a camera for detecting objects within a close proximity of the vehicle [fig.1, col.3, lines 52-65].

Therefore, it would have been obvious to one having ordinary skill in the art to have the teaching of Bates, Brambilla, Samukawa & Miller includes a camera feature in the system of Kopischke for detecting & determining more accurate motion signal of the object to prevent a collision between vehicle and obstacles as desired.

Regarding claim 17, Kopischke discloses a method of collision for an automobile [fig.1,col.2, lines 20-28 and col.3, line 63 to col.4, line 23] comprising:

- object sensor (2) for detecting an object / obstacle (8) [fig.1, col.2, lines 41-48 and col.3, line 63 to col.4, line 23];

- a controller (5) is connected to the object sensor (2) [fig.1, col.2, lines 36-53 and col.4, lines 7-23];

- the controller (5) generating a collision signal indicative of a potential collision as the distance are determined between the vehicle & the object (8) [fig.1, col.2, lines 36-53].

Kopischke does not specifically mention the method of collision having a device for
determining motion & velocity of the object / obstacle relative to the automobile.

Bates teaches a vehicle warning radar system (100) for collision includes a computer system
(106) for determining / detecting (102,104) relative distances and speed of targeted vehicles
(504,506) relate to a vehicle (100,502) [figs.5-7, col.2, line 63 to col.3, line 59 and col.6, line 60
to col.7, line 11].

Therefore, it would have been obvious to one having ordinary skill in the art to employ the
teaching of Bates in the system of Kopischke for detecting & determining an accurate motion
signal of the object to prevent a collision between vehicle and obstacles as desired.

The combination of Kopischke & Bates is still missing determining mass of the object.

Brambilla teaches a function of the determined accident severity includes a control unit (2) is
connected to a crash parameter detection system (6) for detecting the relative speed to the
collision object shortly before the crash event. Based on a measured relative speed, in cases
when the vehicle's own speed, a conclusion can be drawn that a vehicle is moving. On the basis
of a typical **vehicle mass**, the kinetic energy of the colliding vehicle can be estimated [fig.1,
col.4, line 59 to col.5, line 12].

Therefore, it would have been obvious to one having ordinary skill in the art to utilizing the
teaching of Bates & Brambilla includes mass of the object feature in the system of Kopischke
which allows for **determination of the mass of an object** and potential collision severity
between a host vehicle and an object in response to that **mass determination**.

The combination of Kopischke, Bates & Brambilla is still missing determining depth of the
object.

Samukawa teaches an obstacle recognition system for automotive vehicle in step (150) which

may detect the **depth (D0), width (W0)** and speed of the object [fig.3, col.10, lines 30-39].

Therefore, it would have been obvious to one having ordinary skill in the art to have the

teaching of Bates / Brambilla & Samukawa includes the depth of the object feature in the system

of Kopischke which allows for determination of potential collision severity between the host

vehicle and the condition of target object more accurate & complete details and thereby further

preventing injury.

The combination of Kopischke, Bates, Brambilla & Samukawa is still missing performing a

collision countermeasure in response to the collision signal.

Miller teaches a collision countermeasure system for an automobile (12) includes a

countermeasure controller (16) in operative communication with various countermeasure device

(17) as an object detection system (14) for detecting & determining the potential for a collision

between objects within a close proximity of the vehicle [fig.1, col.3, line 24 to col. 4, line 24].

Therefore, it would have been obvious to one having ordinary skill in the art to have the

teaching of Bates, Brambilla, Samukawa & Miller includes a countermeasure device in the

system of Kopischke for detecting & determining more accurate motion signal of the object to

prevent a collision between vehicle and obstacles as desired.

Regarding claims 18-19, Kopischke discloses a method of collision for an automobile [

fig.1,col.2, lines 20-28 and col.3, line 63 to col.4, line 23] comprising:

- object sensor (2) for detecting an object / obstacle (8) [fig.1, col.2, lines 41-48 and col.3, line

63 to col.4, line 23];

- a controller (5) is connected to the object sensor (2) [fig.1, col.2, lines 36-53 and col.4, lines 7-23];

- the controller (5) generating a collision signal indicative of a potential collision as the distance are determined between the vehicle & the object (8) [fig.1, col.2, lines 36-53];

- the controller (5) and object sensor (2) may recognize whether object / obstacle as a vehicle or person or animal or some other object which contains shape , volume, height , width information of the objects [col.4, lines 7-23] and

Bates teaches a vehicle warning radar system (100) for collision includes a computer system (106) for **determining** / detecting (102,104) relative **distances and speed of targeted vehicles** (504,506) relate to a vehicle (100,502) [figs.5-7, col.2, line 63 to col.3, line 59 and col.6, line 60 to col.7, line 11].

Regarding claim 20, Miller discloses the collision countermeasure system for an automobile (12) includes a countermeasure controller (16) in operative communication with various countermeasure device (17) as an object detection system (14) for detecting & determining the potential for a collision between objects within a close proximity of the vehicle which comprises performing both passive & active countermeasure [fig.1, col. 4, lines 24-39].
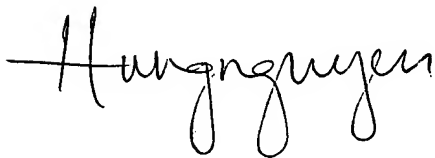
Responses to Arguments

5.   Applicant's argument in RCE filed on August 30, 2004 have been fully considered but are moot in view of the new ground(s) of rejection.

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung T. Nguyen whose telephone number is (571) 272-2982. The examiner can normally be reached on Monday to Friday from 8:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hofsass, Jeffery can be reached on (571) 272-2981. The fax phone number for this Group is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Examiner: Hung T. Nguyen

Date: Sept. 16, 2004